**This form is a Replica of PTO-SB-08A (04-03)**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A-PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(USE AS MANY SHEETS AS NECESSARY)

Sheet 1 of 8

COMPLETE IF KNOWN

Application Number	10/026, 020
Filing Date	December 27, 2001
First Named Inventor	Ralph Johnson
Art Unit	2828
Examiner Name	Tuan M Nguyen
Attorney Docket Number	V637-02670 US

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No ¹	Document Number		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
TN		US 4445218		04-24-1984	Coldren	
TN		US 4608697		08-26-1986	Coldren	
TN		US 4622672		11-11-1986	Coldren et al.	
TN		US 4829347		05-09-1989	Cheng et al.	
TN		US 4873696		10-10-1989	Coldren et al.	
TN		US 4896325		01-23-1990	Coldren	
TN		US 5045499		09-03-1991	Nishizawa et al.	
TN		US 5082799	A	01-21-1992	Holmstrom et al.	
TN		US 5245622	A	09-14-1993	Jewell et al.	
TN		US 5251225	A	10-05-1993	Eglash et al.	
TN		US 5293392	A	03-08-1994	Shieh et al.	
TN		US 5343487	A	08-30-1994	Scott et al.	
TN		US 5358880	A	10-25-1994	Lebby et al.	
TN		US 5365540	A	11-15-1994	Yamanaka	
TN		US 5392307	A	02-21-1995	Sugiyama et al.	
TN		US 5416044	A	05-16-1995	Chino et al.	
TN		US 5422901	A	06-06-1995	Lebby et al.	
TN		US 5468343	A	11-21-1995	Kitano	
TN		US 5491710	A	02-13-1996	Lo	
TN		US 5513204	A	04-30-1996	Jayaraman	
TN		US 5568504	A	10-22-1996	Kock et al.	
TN		US 5588995	A	12-31-1996	Sheldon	
TN		US 5631472	A	05-20-1997	Cunningham et al.	
TN		US 5693180	A	12-02-1997	Furukawa et al.	
TN		US 5719891	A	02-17-1998	Jewell	
TN		US 5719894	A	02-17-1998	Jewell et al.	

Examiner
Signature

Tuan M Nguyen

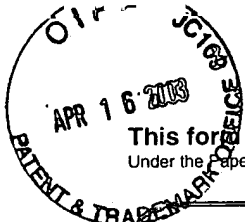
Date
Considered

5-20-03

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.01. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC, 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC, 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



This form is a Replica of PTO-SB-08A (04-03)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B-PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(USE AS MANY SHEETS AS NECESSARY)

Sheet 2 Of 8

COMPLETE IF KNOWN

Application Number	10/026, 020
Filing Date	December 27, 2001
First Named Inventor	Ralph Johnson
Group Art Unit	2828
Examiner Name	Tuan M Nguyen
Attorney Docket Number	V637-02670 US

TN	US	5719895	A	02-17-1998	Jewell et al.	
TN	US	5729567	A	03-17-1998	Nakagawa	
TN	US	5732103	A	03-24-1998	Ramdani et al.	
TN	US	5747366	A	05-05-1998	Brillouet et al.	
TN	US	5754578	A	05-19-1998	Jayaraman	
TN	US	5757833	A	05-26-1998	Arakawa et al.	
TN	US	5805624	A	09-08-1998	Yang et al.	
TN	US	5809051	A	09-15-1998	Oudar	
TN	US	5815524	A	09-29-1998	Ramdani et al.	
TN	US	5818862	A	10-06-1998	Salet	
TN	US	5825796	A	10-20-1998	Jewell et al.	
TN	US	5835521	A	11-10-1998	Ramdani et al.	
TN	US	5877038	A	03-02-1999	Coldren et al.	
TN	US	5883912	A	03-16-1999	Ramdani et al.	
TN	US	5898722	A	04-27-1999	Ramdani et al.	
TN	US	5903586	A	05-11-1999	Ramdani et al.	
TN	US	5912913	A	06-15-1999	Kondow et al.	
TN	US	5943357	A	08-24-1999	Lebby et al.	
TN	US	5943359	A	08-24-1999	Ramdani et al.	
TN	US	5956363	A	09-21-1999	Lebby et al.	
TN	US	5960018	A	09-28-1999	Jewell et al.	
TN	US	5974073	A	10-26-1999	Canard et al.	
TN	US	5978398	A	11-02-1999	Ramdani et al.	
TN	US	5985683	A	11-16-1999	Jewell	
TN	US	5991326	A	11-23-1999	Yuen et al.	
TN	US	6021147	A	02-01-2000	Jiang et al.	
TN	US	6046065	A	04-04-2000	Goldstein et al.	
TN	US	6049556	A	04-11-2000	Sato	
TN	US	6052398	A	04-18-2000	Brillouet et al.	
TN	US	6057560	A	05-02-2000	Uchida	
TN	US	6061380	A	05-09-2000	Jiang et al.	
TN	US	6061381	A	05-09-2000	Adams et al.	

Examiner
Signature

Tuan M Nguyen

Date
Considered

5-20-03

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC, 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC, 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

OTPE JC108
APR 16 2003
PATENT & TRADEMARK

This form is a Replica of PTO-SB-08A (04-03)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B-PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(USE AS MANY SHEETS AS NECESSARY)

Sheet 3 Of 8

COMPLETE IF KNOWN

Application Number	10/026, 020
Filing Date	December 27, 2001
First Named Inventor	Ralph Johnson
Group Art Unit	2828
Examiner Name	Tuan M Nguyen
Attorney Docket Number	V637-02670 US

TN	US	6121068	A	09-19-2000	Ramdani et al.	
TN	US	6127200	A	10-03-2000	Ohiso et al.	
TN	US	6148016	A	11-14-2000	Hegblom et al.	
TN	US	6195485	B1	02-27-2001	Coldren et al.	
TN	US	6207973	B1	03-27-2001	Sato et al.	
TN	US	6252896	B1	06-26-2001	Tan et al.	
TN	US	6314118	B1	11-06-2001	Jayaraman et al.	
TN	US	6341137	B1	01-22-2002	Jayaraman et al.	
TN	US	6359920	B1	03-19-2002	Jewell et al.	
TN	US	6362069	B1	03-26-2002	Forrest et al.	
TN	US	6366597	B1	04-02-2002	Yuen et al.	
TN	US	6372533	B2	04-16-2002	Jayaraman et al.	
TN	US	6424669	B1	07-23-2002	Jiang et al.	
TN	US	6434180	B1	08-13-2002	Cunningham	
TN	US	6542530	B1	04-01-2003	Shieh et al.	
TN	US	2002/ 0067748	A1	06-06-2002	Coldren et al.	
TN	US	2002/ 0071464	A1	06-13-2002	Coldren et al.	
TN	US	2002/ 0075920	A1	06-20-2002	Spruytte et al.	
TN	US	2002/ 0071471	A1	06-13-2002	Kim et al.	
TN	US	2002/ 0075929	A1	06-20-2002	Cunningham	
TN	US	2002/ 0090016	A1	07-11-2002	Coldren et al.	
TN	US	2002/ 0131462	A1	09-19-2002	Line et al.	
TN	US	2003/ 0053510	A1	03-20-2003	Yuen et al.	

Examiner
Signature

Tuan M Nguyen

Date
Considered

5-20-03

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC, 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC, 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

APR 16 2003

PTO/SB/08A (04-03)

Approved for use 04-30-2003. OMB 0651-0031

This form is a Replica of PTO-SB-08A (04-03)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B-PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(USE AS MANY SHEETS AS NECESSARY)

Sheet 4 Of 8

COMPLETE IF KNOWN

Application Number	10/026, 020
Filing Date	December 27, 2001
First Named Inventor	Ralph Johnson
Group Art Unit	2828
Examiner Name	Tuan M Nguyen
Attorney Docket Number	V637-02670 US

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)				
TN		EP	0 740 377	A1	10-30-1996	Hewlett-Packard Company		
TN		EP	0 740 377	B	10-30-1996	Hewlett-Packard Company		
TN		EP	0 765 014	A1	03-26-1997	France Telecom		
TN		EP	0 765 014	B1	07-28-1999	France Telecom		
TN		EP	0 822 630	A1	02-04-1998	Hewlett-Packard Company		
TN		EP	0 874 428	A2	10-28-1998	Motorola, Inc.		
TN		EP	0 874 428	A3	11-04-1998	Motorola, Inc.		
TN		EP	0 874 428	B1	15-04-1998	Motorola, Inc.		
TN		EP	1 294 063	A1	03-19-2003	Avalong Photonics AG		
TN		JP	57026492	A	02-12-1982	NEC Corp.		
TN		WO	98/007218	A1	02-19-1998	W.L. Gore & Associates, Inc.		
TN		WO	00/033433	A2	06-08-2000	Arizona Board of Regents		
TN		WO	00/033433	A3	06-08-2000	Arizona Board of Regents		
TN		WO	00/038287	A1	06-29-2000	Honeywell, Inc.		
TN		WO	00/052789	A2	02-29-2000	The Regents of the University of California		
TN		WO	00/052789	A3	02-29-2000	The Regents of the University of California		
TN		WO	00/065700	A2	11-02-2000	Gore Enterprise Holdings, Inc.		
TN		WO	00/065700	A3	11-02-2000	Gore Enterprise Holdings, Inc.		
TN		WO	01/016642	A2	03-08-2001	Agility Communications		
TN		WO	01/016642	A3	03-08-2001	Agility Communications		
TN		WO	01/017076	A2	03-08-2001	The Regents of the University of California		
TN		WO	01/017076	A3	03-08-2001	The Regents of the University of California		

Examiner
Signature

Tuan Nguyen

Date
Considered

5-20-03

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC, 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC, 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

This form is a Replica of PTO-SB-08A (04-03)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B-PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(USE AS MANY SHEETS AS NECESSARY)

Sheet 5 Of 8

COMPLETE IF KNOWN

Application Number	10/026, 020
Filing Date	December 27, 2001
First Named Inventor	Ralph Johnson
Group Art Unit	2828
Examiner Name	Tuan M Nguyen
Attorney Docket Number	V637-02670 US

TN	WO	01/018919	A1	03-15-2001	The Regents of the University of California
TN	WO	01/024328	A2	04-05-2001	Agility Communications
TN	WO	01/024328	A3	04-05-2001	Agility Communications
TN	WO	01/033677	A2	05-10-2001	Arizona Board of Regents
TN	WO	01/033677	A3	05-10-2001	Arizona Board of Regents
TN	WO	01/084682	A2	11-08-2001	Agility Communications, Inc.
TN	WO	01/093387	A2	12-06-2001	Sandia Corporation
TN	WO	01/093387	A3	12-06-2001	Sandia Corporation
TN	WO	01/095444	A2	12-13-2001	Agility Communications, Inc.
TN	WO	01/098756	A2	12-27-2001	The Regents of the University of California
TN	WO	02/003515	A2	01-10-2002	Agility Communications, Inc.
TN	WO	02/017445	A1	02-28-2002	The Regents of the University of California
TN	WO	02/084829	A1	10-24-2002	Cielo Communications, Inc.

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
TN		ALMUNEAU, G., et al., "Accurate control of Sb composition in AlGaAsSb alloys on InP substrates by molecular beam epitaxy", article, Journal of Crystal Growth, Vol 208, 05-06-1999, pgs 113-6.	
TN		ALMUNEAU, G., et al., "Improved electrical and thermal properties of InP-AlGaAsSb Bragg mirrors for long-wavelength vertical-cavity lasers", article, IEEE Photonics Technology Letters, Vol. 12, No 10, Oct 2000, pgs 1322-4.	
TN		ALMUNEAU, G., et al., "Molecular beam epitaxial growth of monolithic 1.55 μ m vertical cavity surface emitting lasers with AlGaAsSb/AlAsSb Bragg mirrors", article, Journal of Vacuum Science Technology, Vol 8, No 3, May/Jun 2000, pgs 1601-4.	
TN		BLACK, K., et al. "Double-fused 1.5 μ m vertical cavity lasers with record high T_o of 132K at room temperature", article, Electronics Letters, Vol 34, No 20, 10-01-1998, pgs 1947-9.	
TN		BLUM, O., et al., "Electrical and optical characteristics of AlAsSb/BaAsSb distributed Bragg reflectors for surface emitting lasers", article, Applied Physics Letters, Vol 67, No 22, 11-27-1995, pgs 3233-5.	
TN		BLUM, O., et al., "Highly reflective, long wavelength AlAsSb/GaAsSb distributed Bragg reflector grown by molecular beam epitaxy on InP substrates", article, Applied Physics Letters, Vol. 66, No 3, 01-16-1995, pgs 329-31.	
TN		BOUCART, J., et al., "1mW CW-RT monolithic VCSEL at 1.55 μ m", article, IEEE Photonic Technology Letters, Vol 11, No 6, Jun 1999, pgs 629-31	

Examiner
Signature

Tuan M Nguyen

Date
Considered

5-20-03

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC, 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC, 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

APR 16 2003

PTO/SB/08A (04-03)

Approved for use 04-30-2003. OMB 0651-0031

This form is a Replica of PTO-SB-08A (04-03)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449B-PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(USE AS MANY SHEETS AS NECESSARY)

Sheet	6	Of	8
-------	---	----	---

COMPLETE IF KNOWN

Application Number	10/026, 020
Filing Date	December 27, 2001
First Named Inventor	Ralph Johnson
Group Art Unit	2828
Examiner Name	Tuan M Nguyen
Attorney Docket Number	V637-02670 US

TN	CAMPBELL, J., et al., "Quantum dot resonant cavity photodiode with operation near 1.3 μ m wavelength", article, Electronics Letters, Vol 33, No 15, 07-17-1997, pgs 1337-9.
TN	CHANG, C., et al., "Parasitics and design considerations on oxide-implant VCSELs", article, IEEE Photonics Technology Letters, Vol 13, No 12, Dec 2001, pgs 1274-6.
TN	CHOQUETTE, K., et al., "Room temperature continuous wave InGaAsN quantum well vertical-cavity lasers emitting at 1.3 μ m", article, Electronics Letters, Vol 36, No. 16, 08-03-2000, pgs 1388-90.
TN	DOWD, P., et al., "Long wavelength (1.3 and 1.5 μ m) photoluminescence from InGaAs/GaPAsSb quantum wells grown on GaAs", article, Applied Physics Letters, Vol 75, No 9, 08-30-1999, pgs 1267-9.
TN	DUDLEY, J., et al., "Water fused long wavelength vertical cavity lasers", conference proceedings, LEOS '93 Conference Proceedings. IEEE Lasers and Electro-Optics Society 1993 Annual Meeting, Nov 15/8, 1993, pgs 560-1.
TN	GOURLEY, F., et al., "Epitaxial semiconductor optical interference devices", invited paper, SPIE, Vol 792, 1987, pgs 178-189.
TN	GUDEN, M., et al., "Material parameters of quaternary III-V semiconductors for multiplayer mirrors at 1.55 μ m wavelength", article, Modeling Simulation Material Science Engineering, Vol 4 1966, pgs 349-57.
TN	GUO, C., et al., "Theoretical investigation of strained InGaAs/GaPAsSb type-II quantum wells on GaAs for long wavelength (1.3 μ m) optoelectronic devices", post-conference paper, Dept of Electrical Engineering & Center for Solid State Electronics Research, ASU, Tempe, AZ, Apr 1999, pgs 30-1.
TN	GUY, D., et al., "Theory of an electro-optic modulator based on quantum wells in a semiconductor étalon", conference paper, Quantum Well and Superlattice Physics, Mar 23/4, 1987, pgs 189-96.
TN	HALL, E., et al., "Electrically-pumped, single-epitaxial VCSELs at 1.55 μ m with Sb-based mirrors", article, Electronics Letters, Vol 35, No 16, 08-05-1999, pgs 1-2.
TN	HALL, E., et al., "Increased lateral oxidation rates of AlInAs on InP using short-period superlattices", article, Applied Physics Letters, Vol 29, No 9, 01-08-2002, pgs 1100-4.
TN	HALL, E., et al., "Selectively etched undercut apertures in AlAsSb-based VCSELs", article, IEEE Photonics Technology Letters, Vol 13, No 2, Feb 2001, pgs 97-9.
TN	HEGBLOM, E., et al., "Small efficient vertical cavity lasers with tapered oxide apertures", article, Electronics Letters, Vol 34, No 9, 04-30-1998, pgs 895-6.
TN	HEROUX, J., et al., "Optical investigation of InGaAsN/GaAs strained multi-quantum wells", 20 th North American Conference on Molecular Beam Epitaxy, Oct 1-3, 2001, pg 2.
TN	HONG, Y., et al., "Improving Ga(In)Nas properties by migration-enhanced epitaxy and superlattices", 43 rd 2001 Electronic Material Conference, Session G, Paper G10, 06-27-2001.
TN	HONG, Y., et al., "Growth of GaInNAs quaternaries using a digital alloy technique", conference paper, Journal of Vacuum Science and Technology B: Microelectronics and Nanometer Structures, Oct 01/3, 2001, pgs 1163-6.
TN	HUFFAKER, D., et al., "1.15 μ m wavelength oxide-confined quantum-dot vertical-cavity surface-emitting laser", article, IEEE Photonics Technology Letters, Vol 10, No 2, Feb 1998, pgs 185-7.
TN	HUFFAKER, D., et al., "1.3 μ m room-temperature GaAs-based quantum-dot laser", Applied Physics Letters, Vol 73, No 18, 11-02-1998, pgs 2564-6.
TN	IGA, K., "Semiconductor laser in the 21 st century", California conference papers, Photodetectors: Materials and Devices VI, Jan 22/4, 2001, pgs xi-xxv.
TN	JAYARAMAN, V., et al., "Uniform threshold current, continuous-wave, singlemode 1300 nm vertical cavity lasers from 0 to 70°C", article, Electronics Letters, Vol 34, No 14, 07-09-1998, pgs 1405-7.

Examiner
Signature

Tuan M Nguyen

Date
Considered

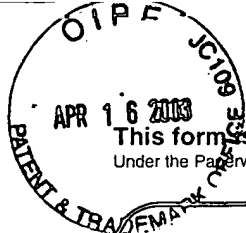
5-20-03

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC, 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC, 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



This form is a Replica of PTO-SB-08A (04-03)

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Substitute for form 1449B-PTO

INFORMATION DISCLOSURE
STATEMENT BY APPLICANT

(USE AS MANY SHEETS AS NECESSARY)

Sheet 7 Of 8

COMPLETE IF KNOWN

Application Number	10/026, 020
Filing Date	December 27, 2001
First Named Inventor	Ralph Johnson
Group Art Unit	2828
Examiner Name	Tuan M Nguyen
Attorney Docket Number	V637-02670 US

TN	KIM, J., et al., "Epitaxially-stacked multiple-active-region 1.55 μm lasers for increased differential efficiency", article, Applied Physics Letters, Vol 74, No 22, 05-31-1999, pgs 3251-3.
TN	KIM, J., et al., "Room-temperature, electrically-pumped multiple-active-region VCSELs with high differential efficiency at 1.55 μm ", article, Electronics Letters, Vol 35, No 13, 06-24-1999, pgs 1-2.
TN	KOTAKI, Y., et al., "GaInAsP/InP surface emitting layer with two active layers", article, Extended Abstracts of the 16 th (1984 International) conference on Solid State Devices and Materials, pgs 133-6.
TN	KOYAMA, F., et al., "Room temperature CWS operation of GaAs vertical cavity surface emitting laser", article, The Transactions of the IEICE, Vol E71, No 11, Nov 1988, pgs 1089-90.
TN	LARSON, J., et al., "GaInNAs-GaAs long-wavelength vertical-cavity surface-emitting laser diodes", article, IEEE Photonics Technology Letters, Vol 10, No 2, Feb 1998, pgs 188-90.
TN	LEE, Y., et al., "Physics and nonlinear device applications of bulk and multiple quantum well GaAs", invited paper, SPIE Vol 792 Quantum Well and Superlattice Physics (1987), pgs 128-133.
TN	LI, J., et al., "Persistent photoconductivity in $\text{Ga}_{1-x}\text{In}_x\text{N}_y\text{As}_{1-y}$ ", article, Applied Physics Letters, Vol 75, No 13, 09-27-1999, pgs 1899-1901.
TN	MIRIN, R., et al., "1.3 μm photoluminescence from InGaAs quantum dots on GaAs", article, Applied Physics Letter 67 (25), 12-18-1995, pgs 3795-7.
TN	NAKAGAWA, S., et al., "1.55 μm InP-lattice-matched VCSELs with AlGaAsSb-AlAsSb DBRs", article, IEEE Journal on Selected Topics in Quantum Electronics, Vol 7, No 2, Mar/Apr 2001, pgs 224-30.
TN	NAKAHARA, K., et al., "1.3 μm continuous-wave lasing operation in GaInNAs quantum-well lasers", article, IEEE Photonics Technology Letters, Vol 10, No 4, Apr 1998, pgs 487-8.
TN	NAONE, R., et al., "Tapered air apertures for thermally robust VCL structures", article, IEEE Photonics Technology Letters, Vol 11, No 11, Nov 1999, pgs 1339-41.
TN	NELSON, D., et al., "Band nonparabolicity effects in semiconductor quantum wells", article, Rapid Communications, Vol 35, No 17, 02-15-1987, pgs 7770-7773.
TN	OHNOKI, N., et al., "Superlattice AlAs/AlInAs-oxide current aperture for long wavelength InP-based vertical-cavity surface-emitting laser structure", article, Applied Physics Letters, Vol 73, No 22, 11-30-1998, pgs 3262-4.
TN	ORTSIEFER, M., et al., "Submilliamp long-wavelength InP-based vertical-cavity surface-emitting laser with stable linear polarization", article, Electronics Letters, Vol 36, No 13, 06-22-2000, pgs 1124-6.
TN	PETERS, M., et al., "Realization and modeling of a pseudomorphic $(\text{GaAs}_{1-x}\text{Sb}_x\text{In}_y\text{Ga}_{1-y}\text{As})/\text{GaAs}$ bilayer-quantum well", article, Applied Physics Letter 67 (18), 10-30-1995, pgs 263941.
TN	PETERS, M., et al., "Band-gap engineered digital alloy interfaces for lower resistance vertical-cavity surface-emitting lasers", article, Applied Physics Letters, Vol 63, No 25, Dec 1993, pgs 3411-3.
TN	PIPREK, J., et al., "Thermal comparison of long-wavelength vertical-cavity surface-emitting laser diodes", Electronics Letters, 05-26-1994, Vol 30, No 11, pgs 866-868.
TN	PIPREK, J., et al., "Minimum temperature sensitivity of 1.55 μm vertical-cavity lasers at -30 nm gain offset", article, Applied Physics Letters, Vol 72, No 15, 04-13-1998, pgs 1814-6.
TN	RAJA, M., et al., "Novel wavelength-resonant optoelectronic structure and its application to surface-emitting semiconductor lasers", article, Electronics Letters, 09-01-1988, Vol 24, No 18, pgs 1140-1142.
TN	SCOTT, J., et al., "High efficiency submilliamp vertical cavity lasers with intracavity contacts", article, IEEE Photonics Technology Letters, Vol 6, No 6, Jun 1994, pgs 678-80.

Examiner
Signature

Tuan M Nguyen

Date
Considered

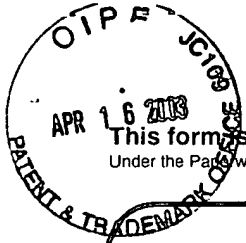
5-20-03

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC, 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC, 20231.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



This form is a Replica of PTO-SB-08A (04-03)

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number

Substitute for form 1449B-PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(USE AS MANY SHEETS AS NECESSARY)

Sheet	8	Of	8
-------	---	----	---

COMPLETE IF KNOWN

Application Number	10/026, 020
Filing Date	December 27, 2001
First Named Inventor	Ralph Johnson
Group Art Unit	2828
Examiner Name	Tuan M Nguyen
Attorney Docket Number	V637-02670 US

TN	SEKIGUCHI, S., et al., "Long wavelength GaInAsP/InP laser with n-n contacts using AlAs/InP hole injecting tunnel junction", article, Japanese Journal of Applied Physics, Part 2, No 4B, 04-15-1999, pgs L443-5.
TN	STARCK, C., "Long wavelength VCSEL with tunnel junction and metamorphic AlAs/GaAs conductive DBR", article, Physics Review B, Vol 39, No 3, 01-15-1989, pgs 1871-83.
TN	SUGIMOTO, M., et al., "Surface emitting devices with distributed Bragg reflectors grown by highly precise molecular beam epitaxy", article, Journal of Crystal Growth, Vol 127, 1993, pgs 1-4.
TN	UCHIDA, T., et al., "CBE grown 1.5 μm GaInAsP-InP surface emitting lasers", article, IEEE Journal of Quantum Electronics, Vol 29, No 6, Jun 1993, pgs 1975-80.
TN	VAN DE WALLE, C. "Band lineups and deformation potentials in the model-solid theory", article, Physical Review B, Vol 39, No 3, 01-15-1989, pgs 1871-83.
TN	WHITAKER, T., "Long wavelengths VCSELs move closer to reality", article, Compound Semiconductor, July 2000, pgs 65-7.
TN	YAMADA, M., et al., "Low-threshold lasing at 1.3 μm from GaAsSb quantum wells directly grown on GaAs substrates", article, IEEE, 0-7803-4947, 04/1998, pgs 149-50.
TN	YAMADA, M., et al., "Room temperature low-threshold CW operation of 1.23 μm GaAsSb VCSELs on GaAs substrates", article, Electronics Letters, 03-30-2000, Vol 36, No 7, pgs 637-638.
TN	YANG, X., et al., "High performance 1.3 μm InGaAsN:Sb/GaAs quantum well lasers grown by molecular beam epitaxy", journal article, Journal of Vacuum Science and Technology B Microelectronics and Nanometer Structures, Vol. 18, No 3, Oct 1999, pgs 1484-7.
TN	YANG, X., et al., "InGaAsNSb/GaAs quantum wells for 1.55 μm lasers grown by molecular-beam epitaxy", article, Applied Physics Letters, Vol 78, No 26, pgs 4068-70.
TN	YANO, M., et al., "Time-resolved reflection high energy electron diffraction analysis for atomic layer depositions of GaSb by molecular beam epitaxy", article, Journal of Crystal Growth, Vol 146, 1995, pgs 349-53.
TN	YUEN, W., et al., "High-performance 1.6 μm single-epitaxy top-emitting VCSEL", article, Electronics Letters, Vol 36, No 13, 06-22-2000, pgs 1121-3.

Examiner Signature	<i>Tuan M Nguyen</i>	Date Considered	5-20-03
--------------------	----------------------	-----------------	---------

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609: Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC, 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, Washington, DC, 20231.
If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.